

Amendments to the Drawings

Pursuant to the Examiner's requirements, a new drawing (FIG. 11) is attached hereto to illustrate the limitations of claim 10-12. In the drawing, the additional reinforcement wires 20' and 20'' are shown. The overlap Z is also shown as required. No new matter has been entered.

Remarks

1. Summary of Office Action

The specification was objected to as containing trademarks not properly identified. The specification also contains informalities. The specification has been amended according to the requirements in regards to identifying the trademarks, providing generic terminology where necessary and correcting the informalities.

Specifically, with respect to trademark use, the Examiner noted the following trademarks: “DryFix, HeliBond MM2, Helifix WB Primer, Hilti DC-SE 20, and HeliBar 45.” Where the Trademark is registered, Applicants have corrected the specification. The remaining product examples are not registered trademarks and have not been changed. Generic terminology accompanies each instance.

The drawings were objected to as lacking features of the invention set out in the claims. A new drawing is attached hereto to satisfy the requirement.

There were typographic errors in claim 1, and therefore the claim was objected to. This has been corrected.

In the office action mailed May 31, 2007, the Examiner rejected claims 11, 12, 30, and 33 under 35 U.S.C § 112. Claims 28-32, and 35 were rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent 5,816,008 to Hohmann (“Hohmann”). Claim 35 was rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent 5,138,813 to Cooney et al. (“Cooney”). Claims 1-27, and 33-34 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hohmann in view of Cooney.

2. Status of Claims

Claims 1-36 are pending. Claim 1 was amended only to correct typographical errors. Claim 30 has been amended only to change the method step to device form.

3. Response to Rejections

a) The rejection of claims 11, 12, 30, and 33 under 35 U.S.C § 112

With respect to claim 11, 12, and 33, it is clear from new Figure 11, that the reinforcement wires are indeed parallel, thread through the connector 10 from opposite directions and overlap. Since the wires must thread through the disclosed connector (see Fig. 9), and from opposite sides of the connector, they cannot be perpendicular and so, there is no ambiguity. This rejection respectfully should be withdrawn.

With respect to claim 33, which was rejected as being a method claim depending from a system claim, the claim has been amended to recite no method steps. This rejection should be overcome by the amendment.

b) The rejection of claims 28-32, and 35 under 35 U.S.C. § 102(b)

In the rejection that the system claim 28 is anticipated by Hohmann, the Examiner appears to have ignored the following claimed structural features of the claim, which are shown in bold below.

28. A system for reinforcing a veneer wall against seismic conditions or wind loading comprising:

a fastener which is installed into a back-up wall of a structure, the fastener having a threaded portion **which extends substantially at right angles from the surface of the back-up wall to provide a thread for engagement with a connector;**

a connector **which is fitted on to the threaded portion of the fastener, the connector having means for engagement with the thread of the fastener such that removal of the connector is prevented without rotation of the**

connector, the connector further having a portion for receiving a reinforcement wire;

a reinforcement wire which is fitted in to said receiving portion of the connector, the reinforcement wire extending substantially at right angles to the fastener and preventing rotation of the connector with respect to the fastener; and

the connector, reinforcement wire **and a portion of the fastener being encased in filler material provided within a bed joint of the veneer wall** to integrate the reinforcement with the veneer wall.

In his analysis of Hohmann, the Examiner is taking the combination of the bent plate 40 and the threaded self tapping screws 48 as the fastener of the claimed invention. In Hohmann, the rear plate portion 50 of the bent plate 40 is secured to a metal stud 24 of the back-up dry wall 14 by the screw fastenings 48, the threaded portion of the screws 48 being embedded in the wall 14 (see column 4 line 66 to column 5 line 4 and the Figures). Thus it cannot be said that Hohmann teaches a system for reinforcing a veneer wall comprising a fastener having a threaded portion which extends substantially at right angles *from the surface* of the back-up wall *to provide a thread for engagement with a connector*, as claimed in claim 28.

The claim is therefore clearly limited to a fastener, such as a helical wall tie, having a threaded portion extending from the surface of the wall for engagement with a connector. Contrary to the opinion of the Examiner, this limitation is not shown in Hohmann.

Further, the Examiner appears to be taking the bent stay 42 of Hohmann to provide the connector of the claimed invention. In Hohmann, a T-head portion 60 of the bent stay 42 is inserted through an aperture 56 of the bent plate 40, where they interlock to limit relative movement therebetween in the plane of the back-up wall 14 (see column 3 lines 1 to 14, column 5 lines 15 to 19 and the Figures). Thus it cannot be said that Hohmann teaches a connector fitted *to the threaded portion* of the fastener and having *means for engagement* with the fastener *thread* such that removal of the connector is prevented without rotating it, as claimed in claim 28.

Indeed on page 7 of the Office Action, in relation to claim 1 the Examiner acknowledges that Hohmann "does not illustrate a fastener in combination with a thread engaging connector".

Further still, in Hohmann, only the bent stay 42 is encased in filler material provided within a bed joint of the veneer wall and the bent plate 40 does not extend into the veneer wall but stops short of it in the cavity (see Figures 1, 3 and 4). This arrangement is essential to the operation of the system of Hohmann, otherwise the desired effect of the anchor system of permitting and limiting relative movement of the brick veneer along two axes would not be achieved (see column 2 lines 43 to 47). Thus it cannot be said that Hohmann describes a portion of a fastener being encased in filler material provided within a bed joint of the veneer wall to integrate the reinforcement with the veneer wall, as claimed in claim 28.

Claim 28 is not anticipated by Hohmann by virtue of these features. Since Claims 29-32 and 35 depend from claim 28, Hohmann cannot anticipate these dependent claims.

Claim 35 was rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Cooney. Cooney essentially discloses the use of a conventional nut 12 and bolt 20 where the nut 12 is embedded in a concrete external wall panel 10. The nut 12 includes a space 24 between the head 14 and the flange 16 for reinforcement bars or rods 22. The bolt is screwed into the embedded nut 12 in order to tighten a U-shaped clip 30 against a C-shaped channel 32, wherein the channel 32 is essentially a wall stud.

Cooney fails to provide a wall tie fastener as set out in claim 28, from which claim 35 depends. The Examiner admits that Cooney shows a "securing bolt," which does not anticipate a twisted profile wire (having helical fins). Claim 28 further requires "the connector, reinforcement wire and a portion of the fastener being encased in filler material provided within a bed joint." None of the Cooney elements are embedded in a bed joint, and furthermore, the

bolt of Cooney is not embedded in any material and only engaged by the bolt threads to the threads of the concrete insert 12. Claim 35 further requires “the fins of the fastener acting as blades which cut a helical path into the masonry.” The bolt of Cooney includes threads which only engage the internal matching threads of tubular connector 12. Furthermore, the fins of the present invention are structurally and functionally different from the threads of the Cooney bolt. The claim limitation that the fins cut a helical path into the masonry when installed with a percussive tool cannot be met by a bolt with threads, as the bolt would merely produce a smooth hole in masonry when installed with a percussion tool. Since Cooney does not show these claim limitations, it cannot anticipate claim 35.

c) The rejection of claims 1-27, 33-34 under 35 U.S.C. § 103(a)

With regard to inventive step, the Examiner has cited Hohmann in combination with Cooney. Hohmann is distinguished above. Cooney essentially discloses the use of a conventional internally threaded nut 12 and correspondingly threaded bolt 20. The nut 12 is embedded in a concrete external wall panel 10. The nut 12 includes a space 24 between the head 14 and the flange 16 for reinforcement bars or rods 22. The threads of the bolt are screwed into the corresponding internal threads of the embedded nut 12 in order to tighten a U-shaped clip 30 against a C-shaped channel 32 (i.e., a wall stud). Clearly, Cooney does not supply the deficiencies of Hohmann.

Nevertheless, the Examiner appears to be suggesting that the worker with ordinary skill would modify the bracket connector of Hohmann by somehow swapping the male/female brackets for a threaded portion and the embedded nut arrangement of Cooney. As will be shown below, the combination does not supply all of the claim limitations.

Hohmann provides a system to anchor a brick veneer wall to an inner wythe in order to make it resistant to seismic forces. Hohmann appears to be addressed to solving a problem similar to that of the present invention and it is presenting a solution in the form of a pair of brackets with a male/female connection in order to achieve this.

In order to adapt the system of Hohmann to provide the invention claimed, at the priority date of the claimed invention, the ordinary worker would have to provide, in place of the bent plate 40, a fastener having a threaded portion extending from the surface of the back-up wall, and, in place of the bent stay 42, a connector for engagement with the thread of the fastener, with the connector having a receiving portion for receiving a reinforcing wire. It is not clear whether the Examiner is suggesting that the receiving portion would be constituted by the space 24 of the embedded nut 12 between the head 14 and flange 16, or whether the ordinary worker would retain the attachment means provided in Hohmann. Only the arrangement in Hohmann prevents rotation of the connector because of the plate-like nature of the bracket; in Cooney, rotation would only be prevented by the interaction of the concrete, not through any structural interplay.

The Examiner appears to have given no consideration as to how the ordinary worker would replace the plate-like components of Hohmann with the nut and bolt connection of Cooney where the nut and bolt has cylindrical geometry. The ordinary worker's knowledge that threaded embedded nuts and bolts can be used to attach concrete panels to studs is simply not relevant to rectifying these differences.

Further, the ordinary worker would have to realise from his knowledge of the art that, by using a threaded fastener and a thread engaging connector having a reinforcement wire passing through a receiving portion therein, the connector would be prevented from being rotated and thereby locked in position connecting the reinforcement wire to the threaded fastener at a fixed

distance. There is no evidence that this concept was comprised in the state of the art at the priority date of the invention and it is submitted that it would be beyond the ordinary level of skill in the art to adapt the known systems to include fasteners and connectors comprising this feature.

The system of the invention provides an alternative system to Hohmann which is significantly simpler to install. The parts are much simpler to manufacture and there are fewer of them, a fact which is not addressed in either of the references. The present invention can also be installed as a retro-fit to an existing building structure. This is not possible with the Hohmann system, and it is not possible with the Cooney system.

Further, under the 'TSM test', there is no teaching or suggestion in Hohmann or Cooney, explicit or implicit, of the use of such fasteners and connectors in veneer wall reinforcement systems, and therefore it is submitted that the ordinary worker would have no motivation to adapt or modify the prior art systems to provide the invention claimed. Thus, it would not be obvious for the ordinary worker to provide the system for reinforcing veneer walls of claim 28.

With regard to the method of claim 1, the obviousness objection appears to have ignored the following claimed method steps and features of the claim, which are shown in bold.

1. A method of reinforcing a veneer wall by tying it to a back-up wall, comprising:

installing a fastener into the back-up wall, the fastener having a threaded portion **which extends substantially at right angles from the surface of the back-up wall to provide a thread for engagement with a connector;**

fitting the connector onto the threaded portion of the fastener, the connector engaging with the thread such that removal of the connector is prevented without rotation of the connector, the connector further having a portion for receiving a reinforcement wire;

fitting the reinforcement wire into said receiving portion of the connector, the reinforcement wire extending substantially at right angles to the fastener and preventing rotation of the connector with respect to the fastener; and

integrating the reinforcement wire with the veneer wall by securing the reinforcement wire within a mortar bed joint of the veneer wall.

The claim requires that the fastener extends from a back up wall and connects to a connector, which connector resides and is connected to the reinforcement wire in the veneer wall. Neither of the alleged “fasteners” of the references is installed into a back wall and **extends substantially at right angles from the surface of the back-up wall to provide a thread for engagement with a connector**, where the connector is in a veneer wall. The Hohmann reference shows a screw installed into a back up wall but it does not extend from the wall to provide a thread for engagement with a connector in a veneer wall. The Cooney reference does not teach or suggest a back up wall and so cannot supply this deficiency of Hohmann.

The Hohmann reference does not teach or suggest **fitting the connector onto the threaded portion of the fastener**. Neither does Cooney, since the claim requires a fastener extending from a back up wall.

Furthermore, neither Hohmann nor Cooney teach or suggest **integrating the reinforcement wire with the veneer wall by securing the reinforcement wire within a mortar bed joint**. Thus, the above arguments for the novelty and non-obviousness of the system of claim 28 apply analogously to the method of claim 1. *Prima facie* obviousness is therefore not established nor is there any cited suggestion to make any modifications to the references to supply the deficiencies thereof.

With respect to claim 2, element 20 of Cooney cannot meet the limitation of the claimed wall tie fastener because it is not twisted wire as required in the claim.

With respect to claim 3, Applicants admit that some fasteners can be installed with a percussive tool, however, the fasteners cited by the examiner in Hohmann and Cooney are not installed with a percussive tool and would be rendered useless in the context provided in the references by doing so.

With respect to independent claim 19, none of the references teach or suggest a twisted wire wall tie with helical fins as set out in the claim. Nor do the references teach or suggest “a hole passing through opposing sides of the tube wall.” In fact, neither of the references have a connector with such a hole to receive reinforcement wire.

With respect to claim 21-23, none of the references teach or suggest that the narrowed internal diameter is a crimped section. Cooney does show matching threads of a nut, which does not teach or suggest this limitation.

Claim 36 is a method claim which requires “driving one end of a helical wall tie into an inner leaf of said wall.” Contrary to the Examiner’s opinion, Cooney does not show driving a helical wall tie into a wall of any kind. Instead, Cooney screws a bolt into a nut, which nut is imbedded in a concrete panel. Further, the claim recites, “the wall tie being secured in position through mechanical interlock with the inner leaf.” Again, the claimed tie interlocks with the wall leaf, not something else.

Claim 336 also requires “placing a connector over the second end of the wall tie.” The second end is the end not in the inner leaf and extends from the wall. Neither of the references teach nor suggest a connector on the second end of the tie.

Claim 36 also requires “threading a reinforcement wire through said hole of the connector; and securing the reinforcement wire and connector in a filler material within a bed joint of a second leaf of the wall.” Neither of the references teaches nor suggests a wall tie

which has one end interlocked in an inner leaf of a wall, and extends to a second leaf where a second end is connected to a connector embedded within a bed joint of the second leaf of the wall. Therefore, there is no *prima facie* obviousness and no suggestion or motivation to modify the references to arrive at the claimed limitations. Hohmann and Cooney do not render any of the claims obvious.

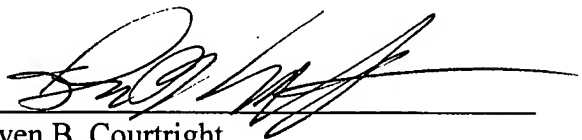
Applicant therefore respectfully requests favorable reconsideration and allowance of the pending claims.

Respectfully submitted,

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